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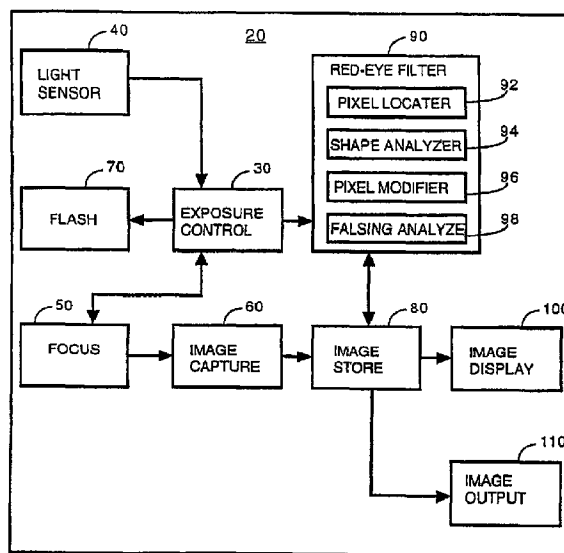
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(54) Title: OPTIMIZED RED-EYE FILTER METHOD AND APPARATUS INVOLVING SUBSAMPLE REPRESENTATIONS OF SELECTED IMAGE REGIONS



(57) Abstract: A digital camera has an integral flash and stores and displays a digital image. Under certain conditions, a flash photograph taken with the camera may result in a red-eye phenomenon due to a reflection within an eye of a subject of the photograph. A digital apparatus has a red-eye filter which analyzes the stored image for the red-eye phenomenon and modifies the stored image to eliminate the red-eye phenomenon by changing the read area to black. The modification of the image is enabled when a photograph is taken under conditions indicative of the red-eye phenomenon. The modification is subject to anti-falsing analysis which further examines the area around the red-eye for indicia of the eye of the subject. The detection and correction can be optimized for performance and quality by operating on subsample versions of the image when appropriate.

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/044070 A1 (FUERSICH MANFRED ET AL) 6 March 2003 (2003-03-06) * Fig. 1a, paragraphs '0025-0029, 0035, 0040-0046! *	1-49
X	US 6 278 491 B1 (WANG JOHN Y. A ET AL) 21 August 2001 (2001-08-21) * abstract, Figs. 1-6, cols. 4-7 *	1-49
X	US 2002/136450 A1 (CHEN TONG-XIAN ET AL) 26 September 2002 (2002-09-26) * Figs. 3,4, paragraphs '0036-0039, 0047!, claim 6 *	1-49
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>JOFFE S ED - INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS: "Red eye detection with machine learning"</p> <p>PROCEEDINGS 2003 INTERNATIONAL CONFERENCE ON IMAGE PROCESSING. ICIP-2003. BARCELONA, SPAIN, SEPT. 14 - 17, 2003, INTERNATIONAL CONFERENCE ON IMAGE PROCESSING, NEW YORK, NY : IEEE, US,</p> <p>vol. VOL. 2 OF 3,</p> <p>14 September 2003 (2003-09-14), pages 871-874, XP010670596</p> <p>ISBN: 0-7803-7750-8</p> <p>* Fig. 2, sections 2, 3 *</p>	1-49
X	<p>US 5 432 863 A (BENATI ET AL)</p> <p>11 July 1995 (1995-07-11)</p> <p>* Figs. 2-4, col. 7 line 27-col. 8 line 57 *</p>	1,34
A	<p>US 6 407 777 B1 (DELUCA MICHAEL JOSEPH)</p> <p>18 June 2002 (2002-06-18)</p> <p>* Figs. 1-10 *</p>	1-49
A	<p>US 5 751 836 A (WILDES ET AL)</p> <p>12 May 1998 (1998-05-12)</p> <p>* Fig. 2b, col. 5 line 42-col. 9 line 52 *</p>	1-49

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